

Appl. No. 09/894,447
Amtd. Dated April 28, 2004
Reply to Office Action of March 26, 2004

Attorney Docket No. 83373.0002
Customer No.: 26021

REMARKS/ARGUMENTS

In response to the Office Action dated March 26, 2004, claims 1 and 3 are amended, and claims 7, 8, 11, 22, 28-35, and 44-51 are canceled without prejudice, waiver, or disclaimer to the subject matter contained therein. Claims 1-6 and 27 remain in the application. It is not the Applicants' intent to surrender any equivalents because of the amendments or arguments made herein. Reexamination and reconsideration of the application are respectfully requested.

Summary of Telephone Interview

On April 24, 2004, a telephone interview occurred between the undersigned, Mr. Ben-Meir, and the Examiner. The Applicants, Mr. Ben-Meir, and the undersigned wish to thank the Examiner for the personal and professional courtesies extended during the interview.

Claim 1 and the additions of the generic descriptions of Hasteloy and Hepa were discussed during the interview.

Restriction Requirement

In paragraph 1 of the Office Action, Applicant's election of Group I, with traverse was noted.

The Applicant has canceled claims 7, 8, 11, 22, 28-35, and 44-51 without prejudice, waiver, or disclaimer to the subject matter contained therein in this response to expedite prosecution of the remaining claims.

Objections to the Specification

In paragraphs 3-4 of the Office Action, the abstract was objected to as containing language which may be implied.

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The Applicant has amended the abstract to overcome the rejection, and respectfully requests that the objection be withdrawn.

In paragraph 5 of the Office Action, the use of trademarks Hasteloy and Hepa were noted by the Examiner.

The Applicant thanks the Examiner for the thorough examination and has made every effort to capitalize the marks wherever used in the application, and have amended the specification to include generic descriptions of Hasteloy and Hepa. Applicants believe that no new matter has been added.

Non-Art-Based Rejections

In paragraph 6 of the Office Action, claims 1-6 and 27 were rejected under 35 U.S.C. § 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which the Applicant regards as the invention.

Applicant respectfully traverses the rejections, but, in order to expedite prosecution of the application, has amended the claims to overcome the rejections. Applicant believes that any amendments made under this section merely clarify the claim language, and do not surrender any equivalents because of such amendments. It is not Applicant's intent to surrender any equivalents due to amendments made which may touch upon these rejections.

In paragraph 7 of the Office Action, claims 1-6 and 27 were rejected under 35 U.S.C. § 112, first paragraph, as not reasonably providing enablement for the apparatus as generically claimed.

The Applicants respectfully traverse the rejections in light of the arguments below.

The specification as filed reads as follows:

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The tapering effect may be substantially reduced by translationally moving the workpiece 224 at a maximum speed of greater than about 1.4 meters per minute, and preferably greater than about seven (7) meters per minute during at least a part of the deposition process, and preferably after the first several deposition passes have been completed.

See page 30, lines 1-5.

Further, the specification as filed reads:

Preferably as the ends of the workpiece approach the burner, the workpiece decelerates at a constant deceleration (e.g., -250 mm/sec²) and then accelerates with an opposite constant acceleration (e.g., 250 mm/sec²). Preferably, the maximum speed and acceleration is limited only by the stress limitations of the workpiece caused by such motion.

See page 30, lines 8-12.

As such, the limitations on speed greater than 1.4 meters per minute, and the deceleration and acceleration limits are specifically listed in the specification, and one skilled in the art could have practiced the invention at the claimed speeds and accelerations given the teachings of the specification.

Art-Based Rejections

In paragraphs 8-11 of the Office Action, claims 1, 2, 5, 6, and 27 were rejected under 35 U.S.C. § 103(a) as being unpatentable over Sarkar, USPN 5,558,693, and claim 3 was rejected under 35 U.S.C. § 103(a) as being unpatentable over Sarkar, USPN 5,558,693 in view of Sanghera et al., USPN 5,294,240.

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The Applicant respectfully traverses the rejections, however, in order to expedite prosecution, the Applicants have amended the claims for clarification. The Applicants respectfully submit that the claims are patentable in light of the clarifying amendments above and the arguments below.

The Sarkar Reference

The Sarkar reference discloses methods of making optical waveguides. The chuck 36 and bait rod 34 are rotated at a selected rate of 10 r.p.m., for core deposition, by a rotary drive 38 mounted on a linear traverse mechanism 40. A position controller 42 receiving signals from the photodetector 20 in the core deposition mode can run the traverse mechanism 40 unidirectionally, and at a desired rate. The traverse mechanism 40 can be made to reciprocate through any chosen length of travel at a desired rate by bypassing the position controller 42. In the core deposition mode the bait rod 34 is first reciprocated through a short distance, and thereafter moved unidirectionally under position control. The traverse mechanism 40 can also reciprocate through a substantive total length, here about 40 cm, for deposition cladding. See Col. 5, lines 49-64.

The Sanghera Reference

The ancillary Sanghera reference discloses a method of forming waveguides with ion exchange of halogen ions. The Sanghera reference is cited as disclosing a chamber made of Hasteloy in Col. 10, line 12.

The Claims are Patentable over the Cited References

The claims of the present invention describe a deposition system for depositing silica particles onto a workpiece. A system in accordance with the present invention comprises a burner for depositing the particles onto the workpiece, a lathe for holding the workpiece and for rotating and translating the workpiece relative to the burner, and a computer for controlling the translating and rotating of the workpiece relative to the burner, wherein the lathe selectively translates the workpiece at a rate of greater than about 1.4 meters per minute.

The cited references do not teach nor suggest the limitations of the claims of the present invention. Specifically, the cited references do not teach nor suggest the limitation of the lathe selectively translates the workpiece at a rate of greater than about 1.4 meters per minute as recited in the claims of the present invention.

The Office Action admits that Sarkar does not specifically disclose that the transverse mechanism is for speeds greater than 1.4 meters per minute. Further, Sarkar, and most deposition systems, have a short range of travel, e.g., 40 cm, as listed in Sarkar, Col. 5, line 63. Such short distances would require large acceleration and deceleration forces, which would place undue stress on workpieces traveling at 1.4 meters per minute in systems such as those taught in Sarkar.

The short distances of Sarkar and other related deposition systems would deposit the soot material in a very short period of time if a 1.4 meter/minute speed were to be used in such a system. The deposition quality would be seriously degraded, and the tapering effect at the ends of workpieces in a Sarkar system used at such speeds would degrade the finished workpiece.

The present invention does not suffer from such deficiencies. The present invention has overcome the limitations of Sarkar and other related deposition systems by determining how to avoid the tapering effect at high translational

workpiece speeds, such as those speeds over 1.4 meters per minute. The prior art, and especially Sarkar, do not teach nor suggest the limitation of the lathe selectively translates the workpiece at a rate of greater than about 1.4 meters per minute as recited in the claims of the present invention. Instead, the prior art, and especially Sarkar, teaches away from the limitations of the present invention.

Further, as discussed in the present specification, the tapering effect as illustrated in FIG. 5 shows unusable portions of the workpiece at the ends, which can be 20 cm or more at each end of the perform. Given the 40 cm total travel length of Sarkar, the entire workpiece would potentially be useless because of the tapering effect present at each end of such a workpiece. See specification, page 29, lines 12-21. As such, the Sarkar system could not be used at the speeds recited in the claims of the present invention.

The ancillary Sanghera reference does not remedy the deficiencies of the Sarkar reference. Namely, the ancillary Sanghera does not teach nor suggest the limitation of the lathe selectively translates the workpiece at a rate of greater than about 1.4 meters per minute as recited in the claims of the present invention. Since neither reference, alone or in combination, teaches the claimed invention, it is respectfully submitted that independent claims 1 and 27 are patentable over the cited references.

Claims 2-6 are also patentable over the cited reference, not only because they contain all of the limitations of independent claim 1, but because claims 2-6 also describe additional novel elements and features that are not described in the prior art.

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Conclusion

In view of the foregoing, it is respectfully submitted that the application is in condition for allowance. Reexamination and reconsideration of the application, as amended, are requested.

If for any reason the Examiner finds the application other than in condition for allowance, the Examiner is requested to call the undersigned attorney at the Los Angeles, California telephone number (213) 337-6742 to discuss the steps necessary for placing the application in condition for allowance.

If there are any fees due in connection with the filing of this response, please charge the fees to our Deposit Account No. 50-1314.

Respectfully submitted,

HOGAN & HARTSON L.L.P.

Date: April 28, 2004

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